

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing Of Claims:

Please amend the claims as follows:

1. (Currently Amended) A system for receiving and processing signals received from a plurality of endpoints, each endpoint including an endpoint transmitter in electrical communication with a power distribution ~~lines~~ line within a power distribution system, the system comprising:

a power line coupler;

a substation transceiver ~~receiver~~ in electrical communication with the power line coupler; and

a substation circuit in electrical communication with the substation transceiver, the substation circuit configured to simultaneously demodulate signals received from the plurality of different endpoints.

2. (Original) The system of claim 1 wherein the substation circuit is programmed to demodulate signals using frequency shift keying.

3. (Original) The system of claim 2 wherein the substation circuit is programmed to demodulate signals within the range of about 970 Hz to about 1006 Hz.

4. (Original) The system of claim 3 wherein each signal has a bandwidth of about 10 mHz or less.

5. (Original) The system of claim 4 wherein each signal has a bandwidth of 4 mHz.

6. (Original) The system of claim 2 wherein the substation circuit is programmed to simultaneously demodulate up to 9000 signals, each signal being from a different endpoint transceiver.

7. (Original) The system of claim 1 wherein the substation circuit includes a digital signal processor programmed to simultaneously demodulate the signal received from the endpoint transmitters.

8. (Original) The system of claim 1 wherein the substation transceiver simultaneously receives signals from a plurality of the endpoint transceivers.

9. (Currently Amended) The system of claim 1 wherein the power line coupler is in electrical communication with a power distribution line within a power distribution system, the system further comprising one or more endpoints in electrical communication within the power distribution system, each endpoint including:
an endpoint circuit configured to generate data; and

an endpoint transceiver ~~transmitter~~ in electrical communication with the endpoint circuit and a power distribution line within the power distribution system, the endpoint transceiver configured to generate a signal embodying the signal, to modulate the data using frequency shift keying, and to transmit the modulated signal onto the power distribution line.

10. (Original) The system of claim 9 wherein:

the endpoint circuit includes an automated meter reading device, the automated meter reading device being interfaced with an electrical meter; and
the data includes a quantity of electrical power measured by the electrical meter.

11. (Original) The system of claim 9 wherein each endpoint further comprises an endpoint transceiver, the endpoint transmitter integrally formed in the endpoint transceiver.

12. (Original) The system of claim 1 further comprising a substation transceiver, the substation receiver integrally formed in the substation transceiver.

13. (Currently Amended) A method of processing signals received from a plurality of endpoints over power distribution lines, the method comprising:
obtaining a plurality of signals from a power distribution line, each signal corresponding to a different frequency bandwidth; and

simultaneously demodulating the plurality signals wherein demodulating the plurality signals comprises,

separating a channel carrying the plurality of signals into sub-channels,
and

separating each of the sub-channels into sub-sub-channels, each of the sub-sub-channels being assigned to different ones of downstream endpoint transceivers each respectively corresponding to ones of the plurality of endpoints, each of the sub-sub-channels having a predetermined bandwidth.

14. (Original) The method of claim 13 wherein simultaneously demodulating the plurality signals includes demodulating each of the signals using frequency shift keying.

15. (Original) The method of claim 14 further comprising simultaneously receiving signals from each of the endpoints.

16. (Original) The method of claim 15 wherein obtaining a plurality of signals from a power distribution line includes obtaining a plurality of signals within a frequency range from about 970 Hz to about 1006 Hz.

17. (Original) The method of claim 15 wherein obtaining a plurality of signals from a power distribution line includes obtaining a plurality of signals, each of the plurality of signals having a bandwidth of about 10 mHz or less.

18. (Original) The method of claim 17 wherein obtaining a plurality of signals from a power distribution line includes obtaining a plurality of signals, each of the plurality of signals having a bandwidth of about 4 mHz.

19. (Original) The method of claim 13 wherein obtaining a plurality of signals from a power distribution line includes obtaining up to 9000 signals.

20. (New) The system of claim 1 wherein the substation circuit being configured to simultaneously demodulate the signals comprises the substation circuit being configured to:

separate a channel on the power distribution line carrying the plurality of signals into sub-channels, and

separate each of the sub-channels into sub-sub-channels, each of the sub-sub-channels being respectively assigned to different ones of the endpoints, each of the sub-sub-channels having a predetermined bandwidth.